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Chapter 9 Levels and Symbology

Overview

Symbology includes which level, color, line style, and weight are associated with each element to be drawn. Following the symbology outlined in this chapter is essential for several reasons, but perhaps the most important reason is the standardization of the final output. Following the standard symbology will ensure that each element, line work, text, etc., will plot the same from drawing to drawing.

This chapter will detail the levels in use at CFLHD, the associated level symbology, the use of the CFLHD DGN library, and CFLHD level filters, including workflows for many of the new MicroStation 2004 Edition tools.

Levels

Within MicroStation 2004 Edition, a design file may contain an unlimited number of levels in which data may be displayed. There are two primary ways in which to assign symbology to each element: first, the color, weight, and line style of the graphic elements are set independently, the same way as in MicroStation J, second, a new addition introduced in MicroStation V8, is **ByLevel** symbology. With ByLevel symbology each level may have a pre-assigned color, line style, and weight. By selecting the desired level, these attributes are automatically set.

As discussed above, the level symbology for any level may be set individually. This includes the ability to set some attributes of elements to ByLevel and other attributes independently. As there are significantly more levels used by CFLHD in MicroStation 2004 than the 63 available in previous versions.



Although MicroStation V8 2004 Edition allows the user unlimited named levels, CFL will generally continue to use the numbered 63 levels for the time being with X10 criteria. The FLD's are currently in a total re-write of their criteria files. While this process is happening, CFL will continue to use the existing criteria files necessitating the use of the original 63 levels and the current D&C Manager **.ddb** file.



While some manual drafting is necessary and expected, most elements should be placed with the GEOPAK D&C manager, and the CFLHD **.ddb** file. This is the best way to insure that elements are placed with the proper symbology, for final output and for use at later stages for GEOPAK quantities.

DGN Libraries

In MicroStation 2004, levels and the associated ByLevel symbology are stored in a DGN library, and may be attached to any MicroStation



file. This library may be edited as a DGN file and once edits are complete all .dgn files will have access to the new levels or updates to levels.

DGN libraries may also contain information for text styles and dimension styles. See the appropriate chapter for these tools. The workflow below outlines how to attach levels contained in the DGN library to the current file.



For CFLHD users the standard DGN Library will be automatically attached. Workflow 1, shown below, is to be used to attach the DGN Library after downloading by CFLHD consultants.

Workflow 1: Attaching a level library

1. *Open the Level Manager by selecting the icon in the Primary Tools tool bar, or by selecting Settings>Level>Manager.*



Figure 9-1: Accessing Level Manager

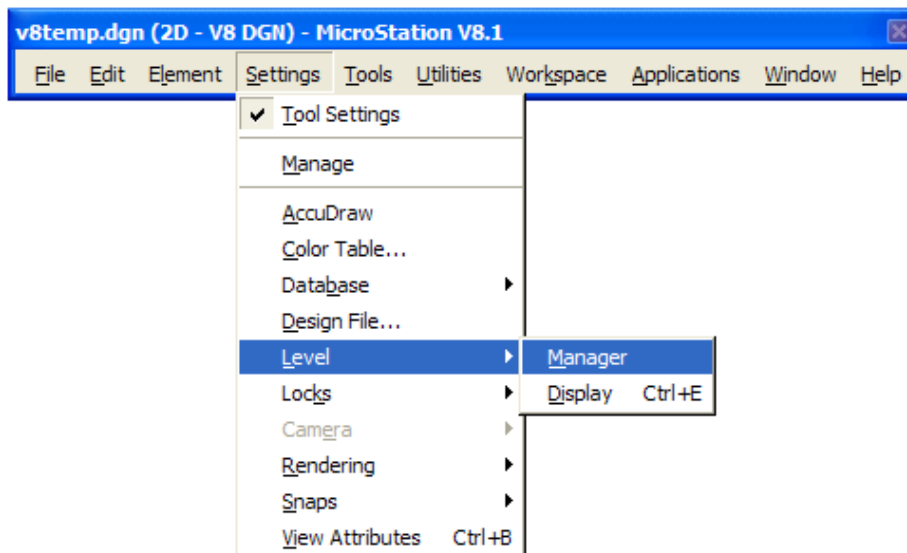


Figure 9-2: Accessing Level Manager

2. *Notice the dialog that is activated has only 1 level shown. Default. These are also no level filters available.*

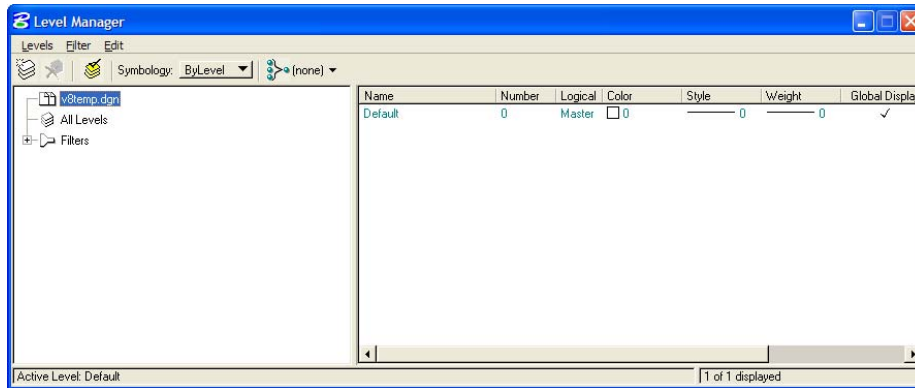


Figure 9-3: Level Manager

3. *Select Levels>Library>Attach.*

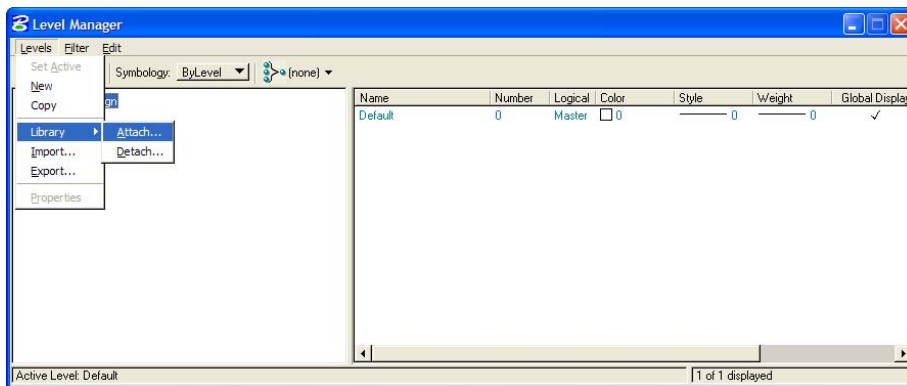


Figure 9-4: Attaching DGN Library

4. *Browse to the file CFL_Levels.dgnlib, select OK.*

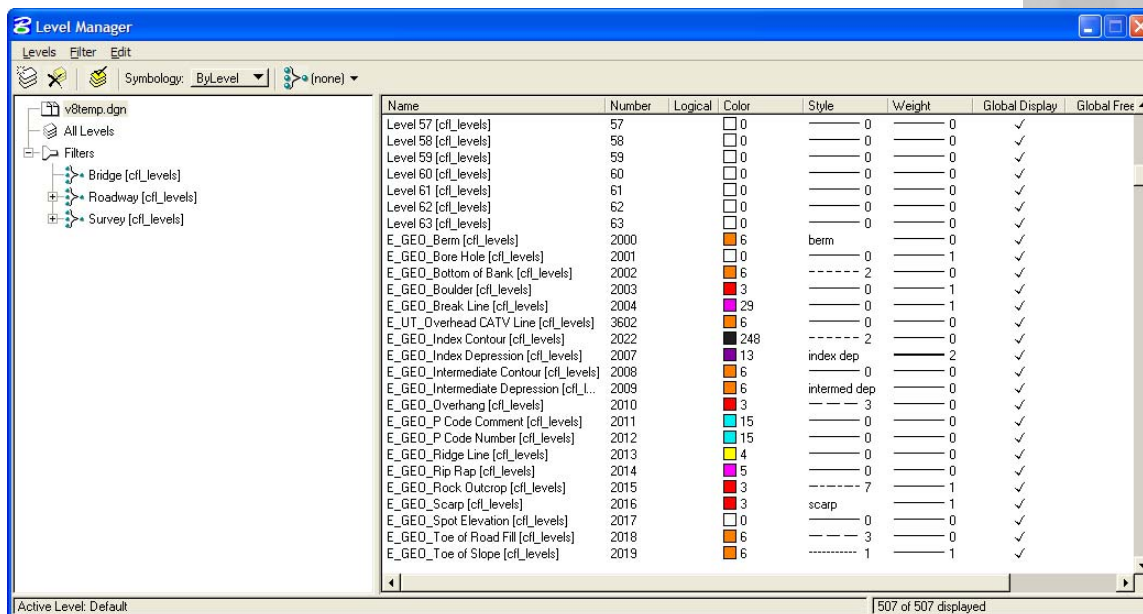


Figure 9-5: Level Manager with DGN Library Attached



In the example above, once the DGN library is selected, all the levels associated with the library are now available for use. There may be levels associated with the DGN library, as well as others created in this design file. Notice the note following the level name above. This is the name of the level library that the level is associated with. For example, E_GEO_Berm [cfl_levels], the text within the parentheses is the name of the DGN library that is attached. For CFLHD users this feature is turned off.

Level Filters

Also new in MicroStation 2004 are **level filters**. With an unlimited number of levels it could easily become very cumbersome to navigate to the desired level. Level filters are designed to group levels together creating a more manageable set of levels. For example the CFLHD levels have been broken down to disciplines such as bridge, roadway, and survey. These disciplines have been further broken down to sub-groups such as alignment, hydraulics, and proposed cross-sections. Shown below are the filters assigned to the CFLHD level library.

Figure 9-6 displays the roadway filters, notice there are no filters assigned to the bridge levels. **Figure 9-7** shows the filters assigned to the survey levels.

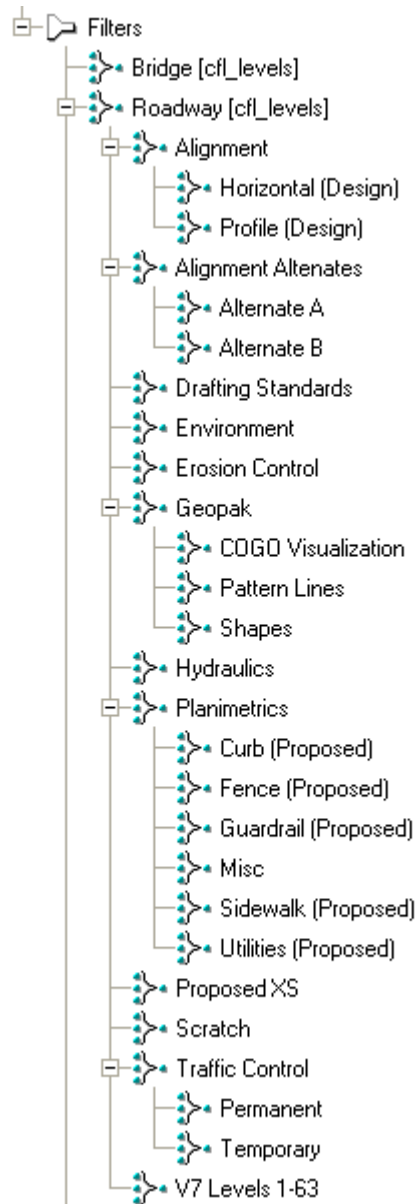


Figure 9-6: Roadway Level Filters

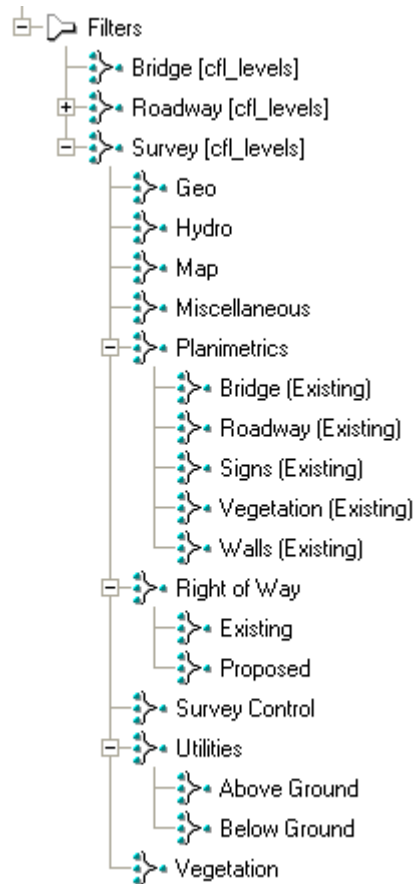


Figure 9-7: Survey Level Filters

Selecting the appropriate filter will display only the desired levels. This does not turn the display of levels on or off, but simply allow the user to work with a smaller sub-set of levels.